

CANADIAN ENERGY EDUCATION NEWSLETTER

Winter, 1990

National Meeting - Invaluable



From left to right, Back row: Ginny Bulger, P.E.I.; Dale Beale, Ont.; Philip Cheffins, Ont.; Jim Gordon, N.S.; Clair Ripley, N.B.; Clive Sweeney, N.S.; Paul Schwartz, N.S.; Kathy Worobec, Alta. Front row: Andrea Main, Alta.; Cathy Ford, N.S.; Cynthia Hyrich, Man.; Pamela Schwartzberg, Ont.; Patricia Hinch, N.S.; Cathy Delano, N.S.

The second *National Energy Education Meeting* held September 12 - 14, 1990, in Halifax, Nova Scotia was invaluable. Eighteen people representing energy education groups from across Canada attended and spent three days discussing programs, the use of theatre, this newsletter, the *Canadian Energy Education Directory*, and future prospects for the Canadian energy education network.

The hosts from the Nova Scotia Department of Mines and Energy warmly welcomed everyone and outlined the energetic agenda for the three-day meeting. Time was spent sharing program information and learning about *Stratagem* - an energy-related simulation game available from Synergistics Consulting Ltd. The group also visited St. Thomas-LeMarchant School in Halifax and watched energy presentations performed by the Nova Scotia Department of Mines and Energy and the Alberta Department of Energy.

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From the Editor

The past editorials focused on preparing energy education programs for the 1990's: ensuring programs deal with the issues of the future and not rehashing of the past.

Today, the environmental concerns of energy use are a priority for all. Much work is being done on policy development at all levels of government, in industry and with other stakeholders. Not only are we focusing on these issues but we are also addressing a potential energy shortage due to the Iraq/Kuwait struggle.

The topics covered in our educational materials have increased to include air quality issues related to energy use. With a potential energy crisis, the demand for energy efficiency information will also increase. There will now be more interest in our materials arising from the environmental concerns and the renewed commitment to conservation.

We have an advantage working for us. We've already been through one energy crisis and have a wealth of information to draw on from that experience. We have also done much work in the past decade on improving our programs. We've got more materials that are even more educationally sound. I feel we have the experience to handle the potential shortage situation well.

With increased interest, many more demands will be made on our services and I'm sure most of us will handle the increased demand with the same staff. With less time to do more, it will be important for us to stay focused on our goals.

-Kathy Worobec

National Meeting

(continued from page 1)

A discussion on energy education using theatre resulted in a number of suggestions:

- balancing the education and entertainment components of presentations;
- encouraging groups to share scripts and videos;
- developing a booklet of energy scripts for student use;
- encouraging students to write and perform their own scripts;
- organizing a video contest.

The newsletter and directory were also discussed. As a result, the newsletter format has changed and the directory format will be revised. Everyone believed new formats would make these tools more useful.

On the third day, a group toured the *Annapolis Tidal Power Project* and learned a lot about this innovative project. A harbour cruise aboard the *Mar II* sailing yacht was enjoyed by everyone aboard and the weather cooperated to make the three-day meeting even more wonderful.

The group agreed national meetings should be held no more than two years apart. The last meeting was in Edmonton in 1987 and many faces and programs have changed in the interim. The Ontario Ministry of Energy offered to host the next meeting a few days prior to the Energy Educators of Ontario's Fast Forward Conference in Ottawa or Toronto of February, 1992.

*Clive Sweeney, Energy Education Program,
Nova Scotia Department of Mines & Energy,
P.O. Box 1087, Halifax, Nova Scotia,
B3J 2X1, (902) 424-8619*

Letter to the Editor

Congratulations Canada!!

Reduce, Reuse, and Recycle are three of the most common words used in any environmental gospel these days, unfortunately, few people preach basic exercises in the reduction of energy use.

Needless to say, I was not too flattered when I recently found out that Canada is number one in the world (per capita) for energy consumption. Indeed Canadians can look towards any other country when asking for help in energy reduction. Perhaps as Canadians we should be taking a very close look at our lifestyles and comparing them to other nationalities who live a life as full as we do without a major assault on the gas or electric meter.

Of course a change in lifestyle, and preaching such a change, can be a sensitive situation, but when one sits back and thinks, it is our educational institutes which form the basis of much of our lifestyle. I believe that if our educational institutes are used in our society to "mold" us into "typical" Canadians with "typical" lifestyles, then perhaps it is here at the educational institute level that we can begin to make significant changes for the future without jeopardizing individual rights.

I look forward to, and hope to find, new and innovative ways in which we can program slight changes into our lifestyles and institutes to promote reduction of energy use. Yours truly, with the first place ribbon still in hand.

Richard Verbisky,
Environment Program Officer,
Camrose International Institute,
Camrose, Alberta

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The **Canadian Energy Education Newsletter** is a free newsletter for those involved in energy education. Individuals and organizations that develop educational resources are welcome to use the ideas in this newsletter and are invited to share their information by submitting articles. Preference will be given to brief (300 words or less), journalistic articles. Appropriate camera-ready illustrations may be included. Two issues are produced yearly; spring and fall.

Deadline for the fall issue is September 1st and the spring issue is March 1st.

Contact: Kathy Worobec, Alberta Department of Energy, Energy Efficiency Branch, 2nd Floor, 10010 - 106 Street, Edmonton, Alberta T5J 3L8, (403) 427-5200, FAX (403) 423-1474.

Editor: Kathy Worobec, Alberta Department of Energy, Energy Efficiency Branch

Advisor: Barbara Lacroix, Public Affairs Officer

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Theatre & Videos

Energy Scripts and Videos

Many groups involved in energy education have, at one time or another, used theatre to promote their message. From puppets to professional actors, a bit of drama catches and holds audience interest and this is especially true of younger audiences.

Often the development of theatrical presentations is started from scratch, giving little consideration to the experience and accomplishments of others. Many times the "wheel" is reinvented.

Nova Scotia's Energy Education Program has begun a collection of energy scripts and videos that will be considered in adapting existing presentations and in developing new ones. If other organizations have effectively used some form of theatre and are prepared to share it, Clive Sweeney would like to know about it.

Contact Clive Sweeney at the address listed previously, if you would like to send scripts, audiovisuals or to find out more about what materials have already been collected.

Videos Available

Energy, Mines and Resources Canada has various videos on energy that may be of interest to energy educators. Some of the titles are:

- Room Full of Energy
- Petroleum: River of Energy
- Energy in Canada
- The Green House
- The Earth Scientists
- Beyond the Ocean Frontier, The Juan de Fuca Ridge

If you want to know more about them, please write to:

Michel Egron-Polak, Energy, Mines and Resources Canada, Communications Branch, 924, 580 Booth Street, Ottawa, Ontario, K1A 0E4

Field Trips

Unique Venue = Unique Energy Awareness Programs

Light, colour, lasers, high voltage electricity, the astronomical aspects of the sun. All these topics are related to energy and are featured in special on-site school programs at the Alberta Science Centre/Centennial Planetarium in Calgary. A special Energy Awareness Week program was offered to upper elementary and junior high grades from November 21 to 30, 1990.

The planetarium star theatre is where the *Catch the Sun* live star show is presented. Instead of learning about solar energy from a housing point of view, *Catch the Sun* introduces how the sun's movements in the sky relates to solar energy intake on the planet's surface. This program extends the Alberta Grade 6 curriculum area on energy.

Associated with the special planetarium production are two regular school science demonstrations conducted by trained volunteers. The demonstrations pertinence to energy education was emphasized during Energy Awareness Week. Using really neat equipment, *Light, Colour and Lasers* explores white light, the colour spectrum, and how lasers are used in everyday life. The demonstration expands the Grade 6 curriculum topics on optics and energy. For a truly electrifying experience, students can see "high voltage" and discover shocking things about static electricity, plasma balls, and lightning. Electricity is dealt with in the Grade 5 topic batteries and bulbs, and the Grade 9 topic called electromagnetic systems.

For more information about these programs, call:

Katherine Sammons, Chief Interpreter,
Alberta Science Centre, Centennial
Planetarium, 701 - 11 Street, S. W., Calgary,
Alberta, T2P 2M5, (403) 221-3706

Meetings

Travelling Exhibit

In Harmony with the Environment is Energy, Mines and Resources newest travelling exhibit. It shows how science can be used to better understand the environment and to reduce the negative impacts upon it, while improving the management of Canada's mineral and energy resources.

The exhibit is divided into three sub-themes of "safer", "cleaner" and "wiser", each conveying specific messages and highlighting departmental activities and partnerships through artifacts, audio-visual material, computer programs, photographs, texts, etc. A main goal of the exhibit is to target information to Canada's youth because scientists and engineers will be required to deal with problems far more complex than those of previous generations. Awareness of the world's resources and sustainable development will be increased.

In Harmony with the Environment is on display at the Saskatchewan Science Centre until December 1990. In the new year the exhibit will be at the Edmonton Space and Science Centre, January to April; the Manitoba Museum of Man and Nature in Winnipeg, April to June; Ottawa's Museum of Science and Technology, September 1991 to April 1992. Tentative venues include Science North in Sudbury, Ontario.

*Energy, Mines and Resources Canada,
Creative Services Division, 920, 580 Booth
Street, Ottawa, Ontario, K1A 0E4,
(613) 992-9120*

New Brunswick Symposium

Each year Energy and Environment Educators of New Brunswick (EENB) holds a three-day symposium. From 80 to 150 teachers and professionals from all over the province gather to hear world-class speakers, meet and discuss current trends in energy and the environment, compare teaching methods, and exchange ideas. Concurrent workshops and seminars for elementary (grades 1 to 6), junior high (grades 7 to 9), senior high (grades 10 to 12) and the community college/university level are designed around the central theme of the symposium. The symposium fee is kept at a minimum so that anyone may have the opportunity to attend. A simultaneous translation service is also offered.

Symposium themes include *Sustainable Development* (1989), *The Greenhouse Effect* (1990), and the planned *Energy, Environment, Technology and Society* (1991). EENB is also planning to hold a *Youth Energy and Environment Forum* in the future. High school students from across the province and their chaperons will be invited to come hear keynote speakers, attend workshops, play *Stratagem* (a sustainable development simulation game), generate and exchange ideas on the role of technology in sustainable development and their vision for the future.

*Angela Birdsell, Executive Director, Energy
and the Environment Educators of New
Brunswick, P.O. Box 1542, Station A,
Fredericton, New Brunswick, E3B 5G2
(506) 450-1581*

Calendars

Energy and the Environment 1991 Calendar

In cooperation with the Energy departments of the provinces and territories, provincial energy educators' groups, and electric utilities (British Columbia and Newfoundland), Energy, Mines and Resources Canada (EMR) produced a 1991 calendar with the theme *Energy and the Environment*.

Each of the twelve provinces and territories was asked to coordinate a childrens' art contest to generate a "month". Selection of the winning entry was left to the province or territory.

The contest yielded twelve imaginative, colourful entries, from Coral Harbour in the far reaches of the Northwest Territories, to Pasadena, Newfoundland. The student illustrations range from Grades 4 to 9. The cover was produced for EMR by a graphic design firm. The calendar is printed on recycled paper.

Winners of the calendar contest were in Ottawa on October 26, 1990, where they were the guests of Minister of Energy, Mines and Resources, the Honourable Jake Epp. The children, accompanied by a parent or teacher, had breakfast in the Parliamentary Restaurant with the minister, and toured the Parliament Buildings and the new Museum of Civilization in Hull, Quebec. Winners received a prize (solar-powered calculator and "Energy" t-shirt) and a plaque recognizing their school's participation in this project.

It is hoped the calendar will become an annual event, and that schools, camps and youth groups will encourage children to share their dreams for an energy-efficient and environmentally-friendly Canada.

Copies of the calendar are to be available from most provincial ministries of energy (or Energy Educators), or from Energy, Mines and Resources Canada. For more information on the calendar, or to order copies (while supplies last) write to the above groups or:

*Energy, Mines and Resources Canada,
Energy Publications, 580 Booth Street,
Room 1575, Ottawa, Ontario, K1A 0E4*

Energy Conservation Calendar Competition

For three consecutive years, New Brunswick students in Grades 4, 5 and 6 have submitted drawings depicting their ideas for energy conservation, alternative energy and energy efficiency. Thirteen drawings are chosen to appear on a school-year calendar which is distributed to all schools in the province.

This Energy and Environment Educators of New Brunswick (EENB) project has experienced growth in popularity over the years. Two to three hundred drawings were submitted in the first two years of the competition. In the third year, over 800 drawings were sent in from all over the province. EENB attempts to downplay the competition aspect and encourage the activity as an awareness-building activity. Last year, submissions were returned to the classes after the competition so that they might be displayed in the school or the home. Future plans for the calendar competition include an energy conservation idea and activity package for use in conjunction with the drawing activity.

Contact EENB at address listed previously.

Views

Natural Gas and The Environment

While there are no quick and easy solutions to the environmental concerns before us, it is obvious that they require action. What kind of action is under global scrutiny, but more prudent use of energy resources is considered by many to be a major step in the right direction. Since human initiative helped create the problem, our collective intelligence is being challenged to create and implement the solutions. Full-scale efforts to conserve energy and to use it more efficiently will help. So will the development of non-polluting energy sources, though it will be some time before the benefits of such measures are felt.

Energy is essential to our existence; we need it to fuel our economy and heat our homes but no form of energy is entirely benign. The fact is that producing, transporting and using energy affects our environment. Finding ways to minimize the impact is of increasing importance to government, industry and consumers. It is a vital and intricate task that the scientific community in Canada and around the world is addressing.

In the interim, natural gas will play an increasingly important role in the fight against environmental degradation. The use of natural gas directly with or in place of other fuels in residential, commercial, industrial and transportation application provides reduced environmental impact in two ways:

- the process is frequently more efficient, so that total energy use is cut;
- when energy is supplied in the form of natural gas, pollutant release per unit of energy is less.

Natural gas is the least carbonaceous of the fossil fuels – it is therefore the least polluting. In the context of atmospheric change some of its inherent advantages are:

- taking into account all steps in the full fuel cycle, natural gas contributes less to global warming;
- natural gas combustion produces no sulphur dioxide (though a small amount of sulphur dioxide is released during the gas processing stage); it therefore contributes much less to acid rain than do the other fossil fuels;

- natural gas does not contain substances which erode the ozone layer;
- natural gas combustion produces fewer nitrogen oxides and complex hydrocarbons and therefore by itself contributes less to photochemical smog.

The beneficial effect of increased use of gas, directly with and in substitution of other fossil fuels, will be felt in its application in all market sectors – industrial, commercial, residential and transportation. In the process, growing markets will stimulate gas exploration and development activity, assist economic development, and improve Canada's energy security.

Michael G. Giles, Vice President, Canadian Gas Association, 55 Scarsdale Road, Don Mills, Ontario, M3B 2R3, (416) 447-6465

Resource Lists

Environmental Education Resources Cataloguing Service

To meet the growing demand for information by educators about environmental learning resources, the Pembina Institute is developing a comprehensive cataloguing service of available Canadian resources for education on environmental protection and conservation.

The service will provide content descriptions, topics covered, audience suitability and bibliographic and ordering information for a wide range of publications, audio-visual resources, curriculum kits and packages, fact sheet series, and periodicals suitable for school and community education. The Institute will be offering computer disk and print versions of this compilation of valuable educational resources.

If your organization or others produce resources you would like publicized, please send details to:

Canadian Environmental Education Resources Project, The Pembina Institute, P.O. Box 7558, Drayton Valley, Alberta, T0E 0M0, (403) 542-6272, Fax: 542-6464

Special Events

Summer 1990 - "Mug Up" for the Environment

Energy and Environment Educators of New Brunswick's (EENB's) first project targeted at promoting awareness among the general public was the *"Mug Up" for the Environment* campaign. A summer project piloted in the city of Fredericton, *"Mug Up"* was EENB's response to the disposable cup dilemma. The target audience was people who spend most of their day working outside their homes and who generally purchase at least one beverage a day (usually coffee) in disposable cups. Many small businesses donated products or services to the project and the primary funding came from The Department of Environment and The Federal Government Challenge '90 student employment program.

The campaign involved many sectors including wholesalers, retailers, restaurateurs, clerks, blue and white collar workers. A lightweight, melamine lidded coffee mug with the *"Mug Up"* logo was made available for \$5.00 through various vendors throughout the city. For a six-week period in July and August, anyone presenting his or her *"Mug Up"* was given a 10¢ discount on their coffee at participating vendors.

Posters, radio ads, (including a *"Mug Up"* rap) displays and t-shirts were part of the promotional campaign. The promotional literature stressed the importance of waste reduction in terms of the environment and energy savings. The development of conserver habits was also stressed.

Over 2000 mugs were sold in the city of Fredericton (pop. 46 000) and surrounding area. Plans are underway for a province-wide *"Mug Up" for the Environment* in the summer of 1991 if funding is available.

Contact EENB at address listed previously.

Teaching Resources

Manitoba Hydro Introduces School Bus Driver Safety Program

A new educational idea, the *School Bus Driver Safety Program* has been developed by Marketing Services of Manitoba Hydro to increase the electrical safety awareness of school bus drivers. The program consists of a kit which includes an audio/visual presentation, quiz, case studies and print material.

The audio/visual presentation has slides, synchronized audio cassette and script that create awareness of various electrical hazards, prevention of electrical accidents and how to react to those situations.

Also in the kit package are overheads which contain a School Bus Drivers' Electrical Safety Answer Sheet for the Quiz, Case Study 1 and Answer Sheet, Case Study 2 and Answer Sheet, and the types of electrical situations to report to Manitoba Hydro. The print material includes a School Bus Drivers' Electrical Safety Quiz and School Bus Drivers' Electrical Safety Handbook.

Two training sessions were held for school bus driver trainers and supervisors of pupil transportation with presentations made by Manitoba Hydro staff.

In October, the same school bus driver trainers and supervisors of pupil transportation organized training sessions in their respective areas for the drivers employed by local school divisions. The material has also been placed in the Manitoba Education Library, making it accessible to any division interested in using it.

A School Bus Electrical Safety Handbook for school-age children was also produced. It explains how they should react if their bus comes into contact with electrical equipment.

So far, 117,000 copies of the handbook — in both French and English — have been printed and distributed to Manitoba's school divisions.

*Cynthia Hyrich, Marketing Co-ordinator,
Marketing Services, Manitoba Hydro, P.O.
Box 815, Winnipeg, Manitoba, R3C 2P4,
(204) 474-3391*

TransAlta Expands Arbour Day Program

During the first week of May, 1991, TransAlta Utilities will hand out about 15 000 lodgepole pine trees to Grade 3 students in their service area as part of Arbour Day celebrations.

The company started the program in 1989 by supplying 30 schools in the Calgary area with trees to plant. In 1990 the program was expanded to include elementary schools in the Calgary and Camrose service areas with 6000 trees being distributed.

"This program is a good opportunity to teach children about tree care. And from TransAlta's point of view that means not planting trees near powerlines," says Al Tischer, community relations representative with TransAlta.

The lodgepole pine was chosen for two reasons, Al says. The tree flourishes in most areas, and it is Alberta's official tree.

Grade 3 students are the recipients of the six-inch seedlings because the program fits their school curriculum. The trees are supplied free of charge by Alberta Agriculture.

The first Arbour Day was held in 1872 in Nebraska. The event was initiated by Julius Morton after he noticed trees disappearing as they were burned for firewood or cut down to make way for farmland. More than one million trees are believed to have been planted on the first Arbour Day. In Canada, Arbour Day is celebrated as part of National Forest Week.

Al Tischer or Cherry Holand at TransAlta Utilities, 110 - 12th Avenue, S.W., Calgary, Alberta, T2P 2M1, (403) 267-7338

or

Mona Hari or Elaine Trudeau at TransAlta Utilities, 10150 - 100 Street, 9th Floor, Edmonton, Alberta, T5J 0P6, (403) 498-7040

An Education Tool Over 50 Million Years Old?

Educators, environmentalists, and community leaders across the country met with The Coal Association of Canada in a series of panel meetings to talk about coal and the coal industry – the myths and the realities. One result of the meetings was the development of a *Coal Kit* designed to help educators teach junior high school students more about coal. The suggestions of the panelists were the basis for a valuable teaching tool that the Coal Association of Canada is offering at no cost to educators across Canada.

Each comprehensive *Coal Kit* comes complete with a 27-minute modular video designed to be viewed either as a unit or as seven separate modules, each explaining one facet of the coal industry in Canada. More in-depth information is covered in a package of 18 fact sheets, also part of the kit. Included are suggestions on where coal can fit into the curriculum. The Coal Association of Canada will even send a coal sample for each student.

Many Canadians, remembering the blackened faces of the miners of yesteryear, think of coal as a fuel of the past. Most are not aware that today, coal is an important energy source in Canada and around the world. Nor are they aware of the strides that have been made in developing clean coal technologies that will help lessen the environmental impacts of burning coal. With the help of these teacher-friendly *Coal Kits*, students will be brought up-to-date about coal and the coal industry.

The *Coal Kit* will enhance the junior high school level core curriculum. It contains resource material about the Canadian coal industry, from the basics about coal, to mining, exports, health and safety, power generation, the environment, and the most promising new technologies.

If you would like more information about this project contact:

Jim Wood, The Coal Association of Canada, Suite 502, 205 Ninth Avenue S. E., Calgary, Alberta, T2G 0R3, (403) 262-1544

Action Energy Program

The Quebec Ministère de l'Énergie des Ressources has 10 000 copies of the French version of *Action Énergie* in circulation for the elementary level. The third edition is complete and consists of 14 teaching projects related to the curriculum. An English version is in production and 3000 copies will be made available.

A research paper on existing energy concepts and activities in the secondary curriculum was completed. Based on this research, *Action Énergie II* has been developed and produced. *Action Énergie II* consists of 15 teaching projects related to the curriculum.

A review of the vocational education curriculum at the secondary level for positioning of energy education activities within the curriculum is underway.

For more information regarding other available programs contact:

*Gilles Menard, Service Conseils,
Gouvernement du Québec, Ministère de
l'Énergie des Ressources, Bureau de
l'efficacité énergétique, 425, avenue Viger
ouest, bureau 600, Montréal, Québec, H2Z
1W9, (514) 873-5463*

Somebody Should Do Something About This

Somebody Should Do Something About This is a new 150-page resource that is being sent to all Alberta school libraries. It includes 47 activities highlighting conservation of energy resources for all grades and subject areas. Each activity includes a theme, objectives, materials and procedures. Topics range from energy audits, recycling projects to car-care clinics. The resource also includes an extensive reference material section on energy resources and the environment. Supplementary resources are listed for all grade levels. A copy has been sent to all provincial/territory energy departments.

*Alberta Department of Energy, Energy
Efficiency Branch, 2nd Floor, Highfield
Place, 10010 - 106 Street, Edmonton,
Alberta, T5J 3L8, (403) 427-5200*

Land Conservation Education Program

The *Land Conservation Education Program* (LCEP) is being developed by Alberta Environment. The goal of the program is to increase Albertans' awareness of the importance of land. The program includes local topics such as land formation, soils, land use and personal land ethics, and briefly examines global land conservation issues.

Phase I of the LCEP is the *Caring for the Land* poster package which is now available to teachers and the general public. It includes a poster illustrating Alberta's landscape and land uses in the province; activities; and a teachers' guide.

Phase II consists of two packages: one is an activity based program targeted to children of ages 9 to 14 in formal and non-formal education settings. This package of activities will lead participants from the awareness of land conservation issues to action in their own environment. The first draft of this package is complete and will be ready for printing in the Spring of 1991. The second package is designed for high school students and general adult public audiences. Major issues and topics related to land use and land conservation will be addressed through an issue based/case study resource package. Background information will accompany both packages.

For further information about the LCEP, contact:

*Alberta Environment, Education Branch,
12th Floor, Oxbridge Place, 9820 - 106
Street, Edmonton, Alberta, T5K 2J6,
(403) 427-6310*

Power Smart Education Program

British Columbia Hydro is offering a *Power Smart* education program to schools. The program has five different parts.

1. Each elementary school in the province received an environmental information guide *Good Plants are Hard to Find*. The guide was developed by teachers for Grades 5 to 7 and is a graphic dictionary approach to environmental problems and solutions.

2. The *Energy Education Materials for Primary Students* has been updated and sent to all elementary schools. This flexible kit is for Kindergarten to Grade 3.

3. B.C. Hydro is also sponsoring Science World *Roadshows Program* which is an outreach program of the provincially sponsored science centre. Science World has developed an *Energy Efficiency and the Environment* presentation which will travel the province. The presentation is a lively, interactive demonstration designed to make science fun.

4. B.C. Hydro in participation with the Ministry of Energy, Mines and Petroleum Resources have developed an in-class energy presentation to be piloted in Greater Vancouver schools. The program follows a format developed with the Environmental Youth Corps using young environmental facilitators to present the program to Kindergarten through Grade 7.

5. A speakers bureau will present a slide-slow targeted for Grades 8 to 10 describing demand side management, the conservation ethic and the future. Marketing personnel around the province will deliver the upbeat, graphically pleasing slide-show.

B.C. Hydro, Residential Energy Management, 6th Floor, 1045 Howe Street, Vancouver, British Columbia, V6Z 2B1, (604) 663-3768

Destination Conservation

Destination Conservation is a program designed for Alberta school jurisdictions which are seeking to improve their energy, water and waste management practices. Through this program, school jurisdictions and their member schools can play a lead role in the improvement and maintenance of the environment. Life-long conservation consciousness and conserving habits are promoted for both school staff and the students. When properly implemented, the program has the added benefit of major financial savings.

Participating school jurisdictions receive direct program training through comprehensive inservice sessions for staff, principals, teachers, maintenance personnel and custodians. Specific inservice packages are provided. Throughout the three-year program school jurisdictions receive ongoing support from the Environment Resource Centre Consultant Team. Answers to technical questions or advice on the classroom or school-based activities are available upon request for the participating school jurisdictions.

Environmental Resource Centre, 10511 Saskatchewan Drive, Edmonton, Alberta, T6E 4S1, (403) 433-8711

National Centre for Appropriate Technology (NCAT) Energy Education Publications

Energy education has been a key part of the National Centre for Appropriate Technology's (NCAT) efforts to increase awareness and use of energy conservation and renewable energy technologies since 1976.

In 1976, NCAT was established to help low-income people become more self-reliant and to improve their chances to become self-sufficient by the wise application of small-scale technologies that matched local labour and resources to solve problems.

These appropriate technologies such as solar energy, wind energy, and energy-efficient construction, would help the less advantaged in society to maintain dignity and improve the quality of life for their families by reducing the amount of income that they spend on energy for their homes.

From the beginning, NCAT has focused on energy technologies as a way to help the low-income families meet the challenges to their budgets prompted by rising energy costs.

Since 1976, NCAT has known that an effective way to change development, delivery, and use of energy is through energy education and reaching children through teachers with the message of what works and what doesn't when it comes to conserving energy and finding new sources of alternative energy supply.

With recent events in the Persian Gulf there is renewed concern about continued dependence on foreign oil supplies from the Middle East to meet basic energy needs, and NCAT's information products prove to be as timely as ever.

NCAT's *Connections* is a curriculum guide for grades 5 and 6. It contains 10 lessons in appropriate energy technologies, including conservation, solar energy, recycling, and transportation. The curriculum also includes a glossary of energy terms and a section of student handouts. *Connections* is available for \$5 a copy (US).

NCAT has also developed an introductory guidebook on photovoltaic technology. *Photovoltaics in the Pacific Islands: An Introduction to PV Systems*, was written under contract to the United States Department of Energy for an audience with rudimentary English skills. However, many kindergarten to Grade 12 teachers have discovered that the publication is an excellent introductory booklet for students learning about the basic components of a photovoltaic system to generate electricity from direct sunlight. This publication also sells for \$5 (US) a copy.

Finally, NCAT sells the popular *Energy Education Guidebook*, a 209-page book that was designed to help community groups to promote energy education. This reference for teachers includes a treasure chest of ideas for teaching energy technology subjects to all grades. This book, too, sells for \$5 (US) a copy.

If any readers would like to find out more about ordering any or all of these publications, or they would like to receive a free copy of NCAT's Publication Catalog, contact:

*National Center for Appropriate Technology
Publications, P.O. Box 4000, Butte,
Montanna, 59702, USA*

Two of Rhode Island's Schools Win National Honors

The Rhode Island Governor's Office of Housing, Energy, and Intergovernmental Relations (GOHEIR) is again sponsoring the National Energy Education Development (NEED) Project for all interested Rhode Island schools. Last year, two of the Rhode Island schools entered in the NEED Project won national honours!

The NEED Project links together more than 5000 schools nationwide. NEED is an effort on the national level to develop an energy network throughout schools with an emphasis on dissemination of information to the students, as opposed to the teachers. NEED combines interdisciplinary focused energy learning and leadership training to empower students to become active participants in their own education and that of others.

The NEED Project has developed a successful energy education network in Rhode Island made up of students; educators; and community, industry and government leaders. The annual NEED Energy Conference for students and teachers was held November 29, 1990, at the Nathan Bishop Middle School in Providence.

In addition, the Governor's Office of Housing, Energy and Intergovernmental Relations is working to develop an energy education curriculum for use in the elementary grades. In developing the curriculum, the NEED network already in place will be instrumental in providing ideas about various energy topics of interest. The focus will be on having the students decide what energy topics they would like to know more about and expanding students' interests and ideas.

*Julie Capobianco, State of Rhode Island and
Providence Plantations, Governor's Office of
Housing, Energy and Intergovernmental
Relations, 275 Westminister Street,
Providence, Rhode Island, 02903,
(401) 277-6920*